

Faunistical and taxonomical studies on oribatids collected in Albania (Acari: Oribatida), I.

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Abstract. A list of 111 oribatid species collected at several sites in Albania is presented. Four of them (*Carabodes csikii*, *Dissorhina shqipetarica*, *Chamobates (Xiphobates) latissimus* and *Scheloribates salebrosus* spp. n.) are new to science. Some notes on rare or little known species are also given. With 25 figures.

INTRODUCTION

A thorough study of the fauna of Balkan Peninsula is important in the knowledge and the genesis of the soil fauna of Hungary and that of the whole Carpathian Basin. Therefore our main goal was to study the pedofauna living in this area.

The initial inclination towards the region began some 100 years ago. Unfortunately, the zoological and botanical “Balkan researches” although supported by the Hungarian Academy of Sciences (HAS) soon came to an end, and for some unknown reasons the gained results were not published, excepting a few (e.g. Frivaldszky I. & Frivaldszky J., 1873, later Csiki, 1922–1940).

On the other hand, soil zoological examinations have not even been started until the late 1950s and any organised, general collecting tours were resumed in the end of the 1970s (collecting work by Balogh, 1956; Loksa, 1960; Gozmány, 1960; Pintér, 1967). However, even these have not brought substantial results, excepting the papers of Balogh (1958 a, b, 1961) in acarology, Pintér (1972, 1978) in malacology and Gozmány (1961, 1997) in lepidopterology. The material collected by Loksa was probably lost.

Other (international and national) soil zoological researches in some countries of this region were organised and started even later (e.g. Bernini *et al.*, 1987; Dubinina *et al.*, 1966; Kunst, 1957, 1959; Jeleva, 1960; Piffl, 1966; Sellnick, 1931; Tarmán, 1958, 1959, 1984; Willmann, 1941, etc.). Furthermore, the Romanian acarological researches may also be connected to the basic questions (e.g. Feider & Suciu, 1957; Feider, Vasiliu & Călugăr, 1971; Vasiliu *et al.*, 1993)

Especially significant results on the region were presented by the collection activity of Dr. B. Hauser (Musée d’Histoire naturelle, Genève) in Greece, which mite material was studied by the senior author (e.g. Mahunka, 1974, 1977 a, b, 2001) and furthermore the unpublished material collected by the authors also in Greece and in the Greek islands.

A few years ago the scientific staff of the Hungarian Natural History Museum (HNHM) renewed their interest in the region and collecting tours were organised (Fejér *et al.*, 2004), the results of these researches were recently published (Murányi, 2007), and just have finished a very similar series of Transylvanian researches as well (Csuzdi & Pop, 2006; Dányi, 2006; Dányi *et al.*, 2006; Konthschán, 2006; Mahunka, 2006 a, b).

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Numerous data of the above listed publications made it probable or even proved the earlier supposed theory of a fauna migration from south to northward. An example is the species-group of *Epilohmannia gigantea* spreading from Greece to Transylvania, or another, the species-group of *Microzetes hellenicus* definitely occurring from Greece to Northeast Hungary (Nyírség). These facts arose our attention to launch new investigations. The Zoology Research Group of the HAS joined forces with this venture that has also won the pecuniary support of the Hungarian Scientific research Found (OTKA No. 72744).

From the available material first we began to examine the oribatids of Albania. The main reason for this was that the mite fauna of Albania as far as we are aware is very poorly known. On the other hand, besides the researches of the Carpathian Basin this geographical region is intriguing mainly owing to the proximity of the Apennine Peninsula and the western parts of Greece.

It is quite obvious that far more species live in Albania that could be treated within the space of a single contribution. What is more, the number of collected samples awaiting examination several times surpasses the quantity that can be studied presently. So in this paper we give a list of localities, under which 111 identified Oribatida species belonging to 74 genera are given, making reference to the so far known distribution types. Among the species four are new to science. Besides the morphological and taxonomical novelties of the newly described species our knowledge is widened regarding the relationships in the aspects of zoogeography and distribution.

In the identification of the listed and described taxa we used primarily the book of Weigmann (2006), the new and older monograph or semi-monographic works of some authors (e.g. Ghylarov, 1975; Pérez-Iñigo, 1969). Besides these we used keys partially or wholly elaborating taxa. We chose the lately published works; for example the determination keys of Moritz (1976), Pérez-Iñigo (1993, 1997), Subias and Arillo (2001). We also relied on yet unpublished keys compiled by us.

As our earlier paper, in this one too, we usually follow the system of Marshall *et al.* (1987), based on that of Grandjean's (1954, 1965), with some modifications introduced by Woas (2002), Subías (2004), Weigmann (2006) and Mahunka (2008 in lit.). In the description the morphological terminology of Grandjean (1954 and several publications) was used with some addenda or modifications of the studied groups or organs (e.g. Mahunka & Zombori, 1985; Norton *et al.*, 1997; Mahunka & Mahunka-Papp, 2001; Behan-Pelletier, 2000; Behan-Pelletier & Eamer, 2008; Niedbała, 2002) and the before mentioned authors.

LIST OF LOCALITIES

E-1812 Periferi County, Dibre 3 km W of q. e Murres, Shkemb i Skanderbeut, gorge of Lumi i Varoshit (975 m) /cave spring and its outlet, stream Varoshit, limestone walls / $41^{\circ}38.792' + 20^{\circ}11.390'$ -litter from dead tree trunk, 11. 10. 2005. Leg. D. Murányi.

E-1813: Periferi County, Dibre, 9km N of Cidhne towards Fushé-Lure(1345m) /karstic forest, limestone rocks/ $41^{\circ}48.892' + 20^{\circ}16.650'$ -beech litter from rocks, 10. 10. 2005. Leg. D. Murányi.

E-1815: Periferi County, Kukes, 3km N of Arren (29km S of the Shkoder-Kukes road (1322m) /karst plateau, secondary beech forest / $41^{\circ}56.833' + 20^{\circ}16.773'$ -beech litter, 10. 08. 2005. Leg.: D. Murányi.

E-1817: Montenegro, 1km SW of Spilijani (829m) /in the river and the littoral alders, limestone rocks,karstic forest / $42^{\circ}54.410' + 20^{\circ}20.062'$ -litter and soil under rocks, 10.12. 2005. Leg.: D. Murányi.

E-1818: Periferi County, Tropoje, W of Ragam, spring of Lumi i Valbones(1434m) /in and around spring/ $42^{\circ}24.620' + 19^{\circ}49.366'$ -beech litter, 10.06. 2005. Leg.: D. Murányi.

E-1920: Periferi County, Elbasan, S of Gurri i Zi, 13 km from the Elbasan junction on the road to Qafa e Shtyllës (900 m) [limestone rocks], 10.04.2006. Leg.: Z. Eröss, Z. Fehér, A. Hunyadi and D. Murányi.

E-1928: Periferi County, Mat, 4 km to Fushë-Lurë from the Peshkopi – Burrel road (1210 m) ,[stream, degraded forest], 13.04.2006. Leg.: Z. Eröss, Z. Fehér, A. Hunyadi and D. Murányi.

E-2005: Saranadë County, Mezopotam, Bistrice River and the riverside pasture, 11.05.2006. Leg.: L. Dányi, J. Kon-tschán and D. Murányi.

E-2006: Vlorë County, Cikë Mts, pine forest N of the Llogara Pass, 11.05.2006. Leg.: L. Dányi, J. Konthchán and D. Murányi.

E-2008: Vlorë County, Cikë Mts, pine forest N of the Llogara Pass, 11.05.2006. Leg.: L. Dányi, J. Konthchán and D. Murányi.

E-2063: Skrapar County, Tomor Mts, 4 km NW of Terovë, NE of Mt. Çuka Partizan, 24.08.2006. Leg.: Z. Fehér, A. Hunyadi, T. Huszár and D. Murányi.

E-2066: Gramsh County, Tërvol, gorge of the Holta Stream, 26.08.2006. Leg.: Z. Fehér, A. Hunyadi, T. Huszár and D. Murányi.

E-2070: Skrapar County, Tomor Mts, Ujanik, gorge of the Ujanik Stream, 23.08.2006. Leg.: Z. Fehér, A. Hunyadi, T. Huszár and D. Murányi.

E-2072: Skrapar County, Ostrovicë Mts, 4,5 km NE of Turbehovë, gorge of Krishovë Stream, moss from rocks, 23.08.2006. Leg.: Z. Fehér, A. Hunyadi, T. Huszár and D. Murányi.

LIST OF THE NEWLY IDENTIFIED SPECIES

ENIOCHTONIIDAE Grandjean, 1947

Eniochthonius minutissimus (Berlese, 1903)

Distribution: Cosmopolitan.

Localities: E-1928, E-2063, E-2070.

BRACHYCHTHONIIDAE Thor, 1934

Liochthonius alpestris (Forsslund, 1958)

Distribution: Holarctic Region.

Locality: E-2008.

Neobrachycthonius magnus Moritz, 1976

Distribution: Palearctic Region.

Locality: E-2072.

Poecilochthonius spiciger (Berlese, 1910)

Distribution: Holarctic Region and South America.

Localities: E-1929, E-2063, E-2070.

Synchthonius elegans Forsslund, 1957

Distribution: Paleartic Region.

Locality: E-2063.

SPHAEROCHTHONIIDAE Grandjean, 1947

Sphaerochthonius splendidus (Berlese, 1904)

Distribution: Mediterranean, semicosmopolitan (?).

Locality: E-1813.

EPILOHMANNIIDAE Oudemans, 1923

Epilohmannia cylindrica (Berlese, 1904)

Distribution: Semicosmopolitan (?).

Locality: E-2005.

PHTHIRACARIDAE Perty, 1841

Phthiracarus boreosetosus Jacot, 1930

Distribution: Holarctic Region.

Locality: E-2006.

STEGANACARIDAE Niedbala, 1986

Atropacarus clavigerus (Berlese, 1904)

Distribution: Mediterranean.

Locality: E-2070.

Atropacarus striculus (C. L. Koch, 1835)

Distribution: Semicosmopolitan.

Locality: E-1928.

Steganacaris spinosus (Sellnick, 1920)

Distribution: European.

Locality: E-1928.

ORIBOTRITIIDAE Grandjean, 1969

Mesotritia nuda (Berlese, 1887)

Distribution: Holarctic Region.

Locality: E-1928.

EUPHTHIRACARIDAE Jacot, 1930

Acrotritia ardua (C. L. Koch, 1841)

Distribution: Cosmopolitan.

Localities: E-1818, E-2070, E-2072.

Acrotritia hyeroglyphica (Berlese, 1916)

Distribution: Mediterranean.

Localities: E-1818, E-2005.

Eupthiracarus monodactylus (Willmann, 1919)

Distribution: Holarctic Region.

Localities: E-1815, E-1928.

NOTHRIDAE Berlese, 1896

Nothrus anauniensis Canestrini et Fanzago, 1876

Distribution: Cosmopolitan.

Localities: E-1818, E-2070.

Nothrus silvestris Nicolet, 1855

Distribution: Holarctic Region, semicosmopolitan (?).

Locality: E-1928.

CAMISIIDAE Oudemans, 1900

Camisia biverrucata (C. L. Koch, 1839)

Distribution: Holarctic Region.

Locality: E-1813.

Heminothrus targionii (Berlese, 1885)

Distribution: Holarctic Region.
Locality: E-1812.

NANHERMANNIIDAE Sellnick, 1928

Nanhermannia elegans Berlese, 1913

Distribution: Palearctic Region.
Locality: E-1928.

Nanhermannia nana (Nicolet, 1855)

Distribution: Cosmopolitan.
Locality: E-1928.

HERMANNIIDAE Sellnick, 1928

Hermannia gibba (C. L. Koch, 1839)

Distribution: Holarctic Region.
Locality: E-1813.

HERMANNIELLIDAE Grandjean, 1934

Hermannella dolosa Grandjean, 1931

Distribution: Palearctic Region (Southern part).
Locality: E-1813.

GYMNODAMAEIDAE Grandjean, 1954

Aleurodamameus setosus (Berlese, 1883)

Distribution: Palearctic Region (Southern part).
Locality: E-2063.

Gymnodamaeus bicostatus (C. L. Koch, 1835)

Distribution: Holarctic Region.
Locality: E-1813.

DAMAEIDAE Berlese, 1896

Metabelba pulverosa Strenzke, 1953

Distribution: Holarctic Region (?).
Locality: E-1818.

Kunstidamaeus tecticola (Michael, 1888)

Distribution: Europe.
Locality: E-1815.

LICNODAMAEIDAE Grandjean, 1954

Licnodamaeus pulcherrimus (Paoli, 1908)

Distribution: Palearctic Region (southern part).
Localities: E-1813, E-1928, E-1929.

CEPHEIDAE Berlese, 1896

Cepheus cepheiiformis (Nicolet, 1855)

Distribution: Holarctic Region.
Locality: E-2008.

Cepheus tuberculosus Strenzke, 1951

Distribution: Europe.
Locality: E-1815.

Eupterotegaeus ornatissimus (Berlese, 1908)

Distribution: Holarctic Region.
Locality: E-1928.

DAMAEOLIDAE Grandjean, 1965

Damaeolus asperatus (Berlese, 1904)

Distribution: Holarctic Region.
Locality: E-2070.

Damaeolus ornatissimus Csiszár, 1962

Distribution: Mediterranean, (Palearctic Region?).
Localities: E-1815, E-2070.

CALEREMAEIDAE Grandjean, 1965

Caleremaeus monilipes (Michael, 1882)

Distribution: Palearctic region (Europe?).
Locality: E-1928.

EREMAEIDAE Oudemans, 1900

Eremaeus hepaticus C. L. Koch, 1835

Distribution: Holarctic Region.
Locality: E-1817.

Eueremaeus oblongus (C. L. Koch, 1835)

Distribution: Holarctic Region.
Localities: E-2070, E-2072.

Eueremaeus valkanovi (Kunst, 1957)

Distribution: Europe, Japan.
Locality: E-1813.

AMERIDAE Bulanova-Zachvatkina, 1957

Amerus troisi (Berlese, 1883)

Distribution: Greece.
Localities: E-1929, E-2070.

ZETORCHESTIDAE Michael, 1898

Zetorcheses phyllosetus Mahunka, 1977

Distribution: Mediterranean.
Locality: E-1813.

LIACARIDAE Sellnick, 1928

Dorycranus acutus (Pschorn-Walcher, 1951)

Distribution: Palearctic Region (?).
Locality: E-1818.

XENILLIDAE Woolley et Higgins, 1966

Xenillus clypeator Robineau-Desvoidy, 1839

Distribution: Palearctic Region.
Locality: E-2008.

Xenillus tegeocranus (Hermann, 1804)

Distribution: Palearctic Region.
Locality: E-1813.

ASTEGISTIDAE Balogh, 1961

Cultroribula bicaltrata (Berlese, 1905)
Distribution: Holarctic Region, (Java?).
Locality: E-1929.

PELOOPPIIDAE Balogh, 1943

Ceratoppia bipilis (Hermann, 1804)
Distribution: Holarctic Region.
Localities: E-1818, 2008.

CARABODIDAE C. L. Koch, 1837

Carabodes hungaricus Balogh, 1943
Distribution: Balkan Peninsula (northern part).
Locality: E-2063.

Carabodes csikii sp. n.

Carabodes femoralis (Nicolet, 1855)
Distribution: Europe, (Palearctic Region?).
Localities: E-1928, E-2063.

Carabodes minusculus Berlese, 1925
Distribution: Palearctic Region, USA.
Locality: E-2072.

Carabodes rugosior Berlese, 1916
Distribution: Holarctic Region.
Locality: E-2070.

TECTOCEPHEIDAE Grandjean, 1954

Tectocepheus minor Berlese, 1903
Distribution: Europe (southern part), Palearctic and Oriental Regions (?)
Locality: E-1818.

Tectocepheus velatus sarekensis Trägårdh, 1910
Distribution: Cosmopolitan (?).
Localities: E-1812, E-1815, E-1928, E-2063.

Tectocepheus velatus velatus (Michael, 1880)
Distribution: Cosmopolitan (?)
Localities: E-1813, E-2063.

OPPIIDAE Sellnick, 1937

Berniniella bicarinata (Paoli, 1908)
Distribution: Palearctic Region.
Localities: E-1815, E-2005, E-2063, E-2070.

Dissorrhina corniculata (Paoli, 1908)
Distribution: East Mediterranean.
Locality: E-1929.

Dissorrhina shqipetarica sp. n.

Lauroppia acuminata (Strenzke, 1951)
Distribution: Europe, (Vietnam).
Localities: E-1812, E-1928

Lauroppia fallax (Paoli, 1908)
Distribution: Semicosmopolitan.
Locality: E-2070.

Medioppia beskidensis (Niemi et Skubala, 1993)
Distribution: Poland.
Locality: E-2008.

Micropia minus (Paoli, 1908)
Distribution: Cosmopolitan.
Localities: E-1920, E-2005, E-2072.

Oppia denticulata (R. et G. Canestrini, 1882)
Distribution: Palearctic Region, (semicosmopolitan?).
Locality: E-2063.

Oppiella nova (Oudemans, 1902)
Distribution: Cosmopolitan (?)
Localities: E-1920, E-1928, E-1929.

Ramusella (Insculptoppia) elliptica (Berlese, 1908)
Distribution: Holarctic Region (southern parts).
Locality: E-2005.

QUADROOPPIIDAE Balogh, 1983

Quadroppia hammerae Minguez, Ruiz et Subías, 1985
Distribution: Semicosmopolitan?
Locality: E-2008.

Quadroppia monstruosa (Hammer, 1979)
Distribution: Europe, (semicosmopolitan ?).
Localities: E-1812, E-2070.

Quadroppia quadricarinata (Michael, 1885)
Distribution: Holarctic Region.
Locality: E-2008.

AUTOGNETIDAE Grandjean, 1960

Autogneta longilamellata (Michael, 1885)
Distribution: Holarctic Region.
Locality: E-1928.

SUCTOBELBIDAE Jacot, 1938

Allosuctobelba grandis (Paoli, 1908)
Distribution: Holarctic Region.
Locality: E-2063.

Suctobelba altvateri Moritz, 1970
Distribution: Central Europe.
Locality: E-2072.

Suctobelba granulata van der Hammen, 1952
Distribution: Europe.
Localities: E-1815, E-1928.

Suctobelba trigona (Michael, 1888)
Distribution: Palearctic Region.
Locality: E-1928.

Suctobelbella alloenasuta Moritz, 1971
Distribution: Holarctic Region.
Localities: E-1815, E-2063.

Suctobelbella sarekensis (Forsslund, 1941)
Distribution: Holarctic Region.
Localities: E-1928, E-2072.

Suctobelbella subcornigera (Forsslund, 1941)
Distribution: Holarctic Region (semicosmopolitan?)
Locality: E-1815.

Suctobelbella subtrigona (Oudemans, 1916)
Distribution: Holarctic Region (semicosmopolitan?)
Locality: E-2070.

SPINOZETIDAE Balogh, 1972

Spinozetes inexpectatus Piffl, 1966
Distribution: Greece and Albania.
Locality: E-2070.

MICROZETIDAE Grandjean, 1936

Microzetes helleicus Mahunka, 1977
Distribution: Greece and Albania.
Locality: E-2070.

PHENOPELOPIDAE Petrunkevitch, 1955

Eupelops acromios (Hermann, 1804)
Distribution: Palearctic Region.
Localities: E-1812, E-1818.

Eupelops major (Hull, 1914)
Distribution: Holarctic Region (semicosmopolitan?).
Locality: E-1817.

Peloptulus phaenotus (C. L. Koch, 1844)
Distribution: Palearctic Region.
Localities: E-18132, E-1818.

ACHIPTERIIDAE Thor, 1929

Achipteria coleoptrata (Linné, 1958)
Distribution: Holarctic Region.
Localities: E-2008, E-2070.

Parachipteria punctata (Nicolet, 1855)
Distribution: Holarctic Region.
Locality: E-2008.

ORIBATELLIDAE Jacot, 1925

Ophidiotrichus tectus (Michael, 1884)
Distribution: Europe (mostly in southern part).
Locality: E-1929.

Oribatella calcarata (C. L. Koch, 1835)
Distribution: Holarctic Region.
Locality: E-1813.

Oribatella ornata (Coggi, 1900)
Distribution: Europe.
Locality: E-1929.

Oribatella sexdentata Berlese, 1916
Distribution: Holarctic Region.
Locality: E-1928.

Oribatella tenuis Csiszár, 1962
Distribution: Balkan Peninsula.
Locality: E-1928.

Tectoribates proximus (Berlese, 1910)
Distribution: East Mediterranean..
Localities: E-2006, E-2008.

CERATOZETIDAE Jacot, 1925

Euzetetes globulus (Nicolet, 1855)
Distribution: Palearctic Region.
Locality: E-1817.

Ceratozetes laticuspidatus Menke, 1964
Distribution: Palearctic Region
Locality: E-2005.

Ceratozetes mediocris (Berlese, 1908)
Distribution: Holarctic Region, Australia.
Locality: E-1815.

Sphaerozetes orbicularis (C. L. Koch, 1835)
Distribution: Holarctic Region.
Locality: E-2008.

Sphaerozetes piriformis (Nicolet, 1855)
Distribution: Palearctic Region.
Locality: E-2063.

CHAMOBATIDAE Thor, 1937

Chamobates (Chamobates) interpositus Pschorner-Walter,
1953
Distribution: Europe.
Localities: E-1812, E-2008.

Chamobates (Chamobates) pusillus (Berlese, 1895) sensu
Mahunka & Mahunka-Papp
Distribution: Palearctic Region.
Locality: E-2006.

Chamobates (Xiphobates) latissimus sp. n.

Chamobates (Xiphobates) rostratus Sellnick, 1928.

Distribution: Europe.

Locality: E-1818.

Chamobates (Xiphobates) voigsti (Oudemans, 1902)

Distribution: Palearctic Region.

Localities: E-1813, E-1928, E-2006, E-2063, E-2072.

Globozetes longipilus Sellnick, 1928

Distribution: Central and South Europe.

Locality: E-2008.

ORIBATULIDAE Thor, 1929

Liebstadia willmanni Miko et Weigmann, 1996

Distribution: Central Europe.

Locality: E-1817.

Lucoppia burrowsi (Michael, 1890)

Distribution: Holarctic Region (southern part).

Locality: E-1818.

Oribatula tibialis (Nicolet, 1855)

Distribution: Holarctic Region.

Localities: E-1813, E-1815.

Eporibatula rauschenensis (Sellnick, 1908)

Distribution: Europe.

Locality: E-1818.

Zygoribatula excavata (Berlese, 1916)

Distribution: Mediterranean.

Localities E-1812, E-2005.

Zygoribatula exilis (Nicolet, 1855)

Distribution: Holarctic Region.

Localities: E-1812, E-2063, E-2072.

Zygoribatula frisiae (Oudemans, 1916)

Distribution: Palearctic Region.

Locality: E-2066.

Zygoribatula glabra (Michael, 1890)

Distribution: Palearctic Region.

Localities: E-1812, E-1818.

SCHELORIBATIDAE Jacot. 1935

Hemileius initialis (Berlese, 1908)

Distribution: Palearctic Region.

Locality: E-2006.

Scheloribates pallidulus (C. L. Koch, 1841)

Distribution: Holarctic Region, (cosmopolitan?).

Locality: E-2005.

Scheloribates salebrosus sp. n.

HAPLOZETIDAE Grandjean, 1936

Peloribates europaeus Willmann, 1935

Distribution: Palearctic Region.

Locality: E-2005.

GALUMNIDAE Jacot, 1925

Galumna tarsipennata Oudemans, 1914

Distribution: Palearctic Region (southern part) and Brasil.

Locality: E-2066.

DESCRIPTIONS OF NEW AND NOTES ON RARE SPECIES

Carabodes csikii sp. n.

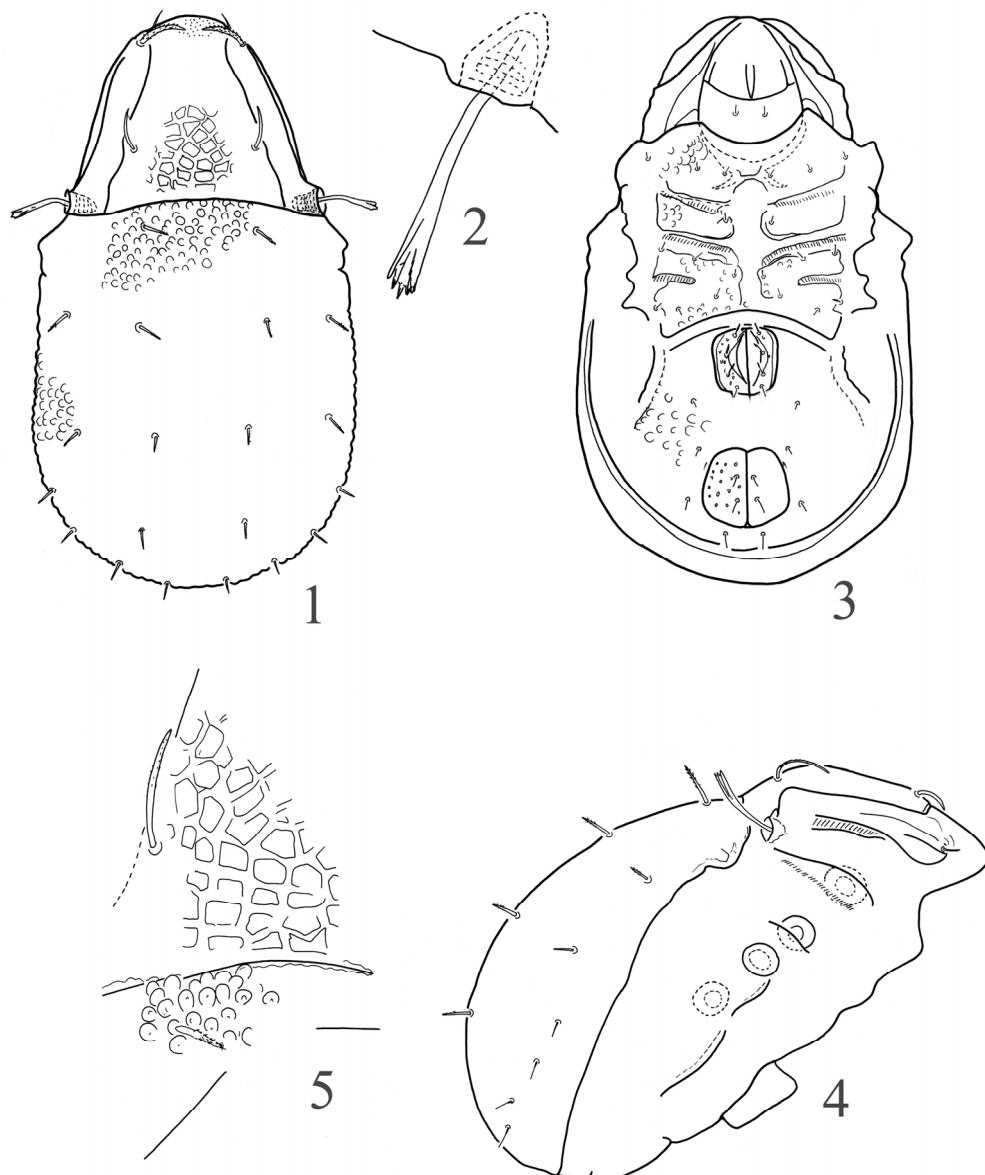
(Figs. 1–5, Plate I)

Material examined. Holotype: Albania, Periferi Mat, 4 km to Fushë-Lurë from the Peshkopi – Burrel road (1210 m), [stream, degraded forest], 13.04.2006. Leg.: Z. Erőss, Z. Fehér, A. Hunyadi and D. Murányi. (E-1928). 5 paratypes from the same sample. 1 paratype: 1km SW of Spilijani (829m) /in the river and the littoral alders, limestone rocks, karstic forest /42°54.410' +20°20.062'-litter and soil under rocks, 10.12. 2005. Leg.: D. Murány (E-1817). Holotype (1754-HO-2008) and 5 paratypes (1754-PO-2008): Hungarian Natural History Museum (HNHM), 1 paratype: Muséum d'Histoire naturelle, Genève (MHNG).

Diagnosis. Prodorsum widely rounded, lamellae narrow. Interlamellar surface with polygonal pattern, notogastral surface covered by round tubercles. Lamellar setae phylliform, interlamellar ones slightly dilated.

Sensillus comparatively long, with divided but narrow head. Ten pairs of erect, short and bacilliform notogastral setae present. Tutorium well sclerotised. Epimeral surface and surface of the ventral plate with large alveoli, genital plates with small irregular, anal plates with larger round alveoli. Four pairs of short genital setae present.

Measurements. Length of body: 351–428 µm, width of body: 201–226 µm.



Figures 1–5. *Carabodes csikii* sp. n. 1 = body in dorsal view, 2 = sensillus, 3 = body in ventral view, 4 = body in lateral view, 5 = sculpture of the prodorsal and notogastral surface

Prodorsum. Rostrum convex, widely rounded, its surface finely granulate. Lamellae narrow, their apices cut obliquely, surface mostly smooth. Interlamellar region ornamented by coarse polygonal pattern (Fig. 5). Rostral setae spiniform, smooth, arising on the apical part of tutorium, lamellar setae widest of all, phylliform, roughened.

Interlamellar setae located on the interlamellar surface, slightly dilated, curved anteriorly. Sensillus (Fig. 2) comparatively long, its peduncle much longer than the narrow and split head.

Notogaster. Whole surface covered by nearly equally large, round tubercles (Fig. 5). In the middle of them a small alveolus(?) visible. Their dis-

tance varies from each other. Dorsosejugal suture convex. Ten pairs of spiniform, erect notogastral setae present, six pairs in median position longer than the four posterolateral ones. Among the median pairs setae c_2 longer than la and lm , these setae roughened (Fig. 4), all others in posteromarginal position smooth.

Lateral part of podosoma. A strong tutorium present, without apex (Fig. 4). On the lateral surface some large alveoli also visible.

Ventral parts (Fig. 3). Surface of the epimeral region ornamented by larger, ventral plate by similar but scarcely located alveoli. All epimeral borders and apodema well visible. Bo . 3 shorter than the others. Epimeral setal formula: 3 – 1 – 3 – 3, all setae simple, spiniform, genito-anal setal formula 4 – 1 – 2 – 3. Genital setae short and simple, arising in longitudinal rows, along the inner margin. Adanal setae varying in length, setae ad_1 slightly longer than the others. Lyrifissures iad hardly observable. Along the genital aperture a pair of well observable, directed posteriorly curved lath. The surface of the genital plates with smaller, irregular, anal plates with larger and round foveolae.

Remarks. On the basis of the dorsal sculpture (large alveoli on prodorsum and large, round tubercles on notogaster) and of the long sensillus, the new species is related to *Carabodes manganoi* Bernini, 1976. However, the new species is distinguished from it by the longer and ciliate notogastral setae (much shorter and smooth in *manganoi*) and by the coarse polygonate prodorsal pattern (it composes from rounded fields).

Etymology. We dedicate the new species Dr. Ernő Csiki, one of the best Hungarian coleopterologists, the former director of the Zoological Department of the Hungarian Natural History Museum, and the best Hungarian collector in Albania.

***Tectocepheus minor* Berlese, 1903**
(Figs. 6–8)

Diagnosis. Rostral apex with two incisions, located far from each other. Lamellar cusp broad, with outer and inner lateral teeth, small lateral

teeth mostly absent. Notogastral setae very short, fusiform. Notogastral margin without median angle. Tectopedia 2–3 with well developed lobe posteriorly. Circumpedal carina long, normally sclerotised and developed. Lyrifissures iad in adanal position.

Remarks. All exemplars studied belong to the „*cuspidentatus* Knülle” type.

***Dissorhina shqipetarica* sp. n.**
(Figs. 9–11)

Material examined. Holotype: Albania, Skrapar county, Tomor Mts, 4 km NW of Terovë, NE of Mt. Çuka Partizan, 24.08.2006. Leg.: Z. Fehér, A. Hunyadi, T. Huszár and D. Murányi. (E-2063). 7 paratypes from the same sample. Holotype (1755-HO-2008) and 5 paratypes 1755-PO-2008): HNHM, 2 paratypes: MHNG.

Diagnosis. Rostrum tripartite with triangular median apex, bearing rostral setae. One pair of short, well sclerotised basal and one pair of weak lateral costulae present. Sensillus long, gradually widened distally, with 6 (5–7) short bristles on its distal end. Postbothridial tubercles present. No essential difference – except the short setae c_2 – in length of notogastral setae. Posterior border (bo . 4) of the epimeral region with furrow in which some tubercles. Five pairs of genital setae, except g_4 all arranged in one row.

Measurements. Length of body: 218–231 µm, width of body: 118–129 µm.

Prodorsum. Rostral apex triangular, hardly protruding from rostral part of prodorsum. Incisure wide, lateral teeth rounded, not shorter than rostral apex. Rostral setae arising on median apex. Prodorsal surface with weak costulae, one pair of short, thick, but narrower ones located basally and a pair of S-shaped, also weak ones laterally. Not one reaching to the insertion of lamellar setae. Some weak maculae and a comparatively large granulate field visible laterally. Ratio of prodorsal setae: $ro > exa > in > le$. Sensillus gradually dilated distally, with rounded distal end bearing 5–6 bristles on its margin (Fig. 9). A pair of well

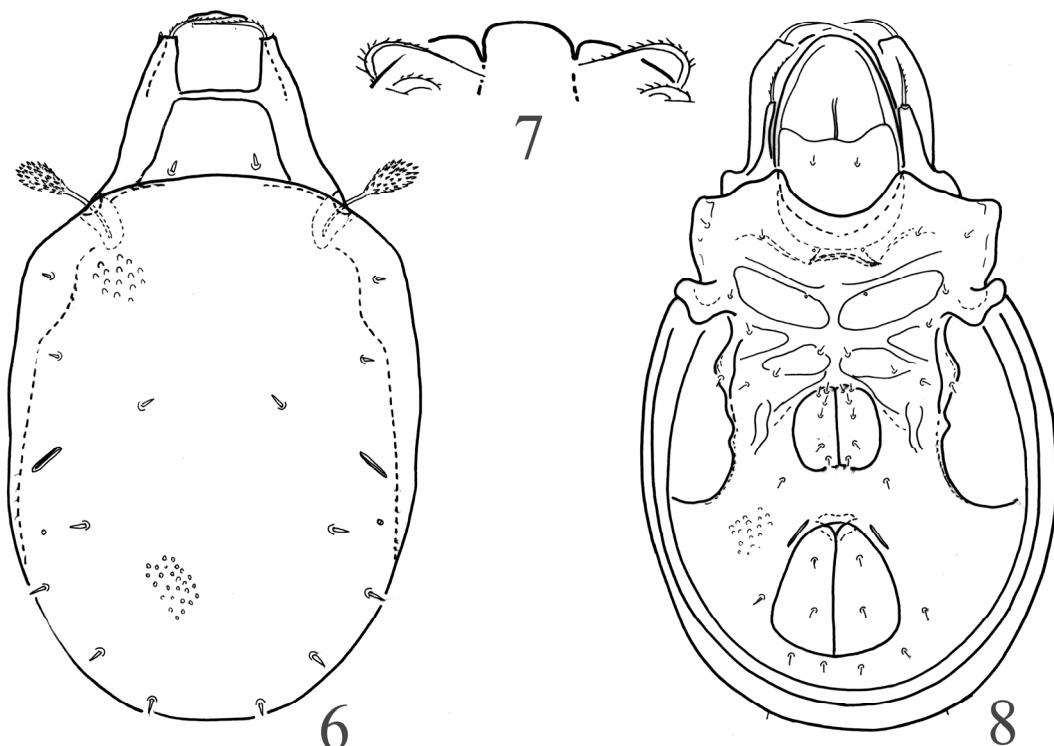
developed, singular posterobothridial tubercles present.

Notogaster. Anterior part slightly narrowed anteriorly, dorsosejugal suture slightly convex. Ten pairs of comparatively thick and long notogastral setae present, c_2 , p_2 and p_3 shorter than the others. Setae la and lm arising nearly in a transversal line, h_1 bent outwards.

Lateral part of podosoma. Pedotecta I very small, bearing setae lc . Some maculae and some granulate areas present in this part, some well

sclerotised crests also seen above the legs (Fig. 11)

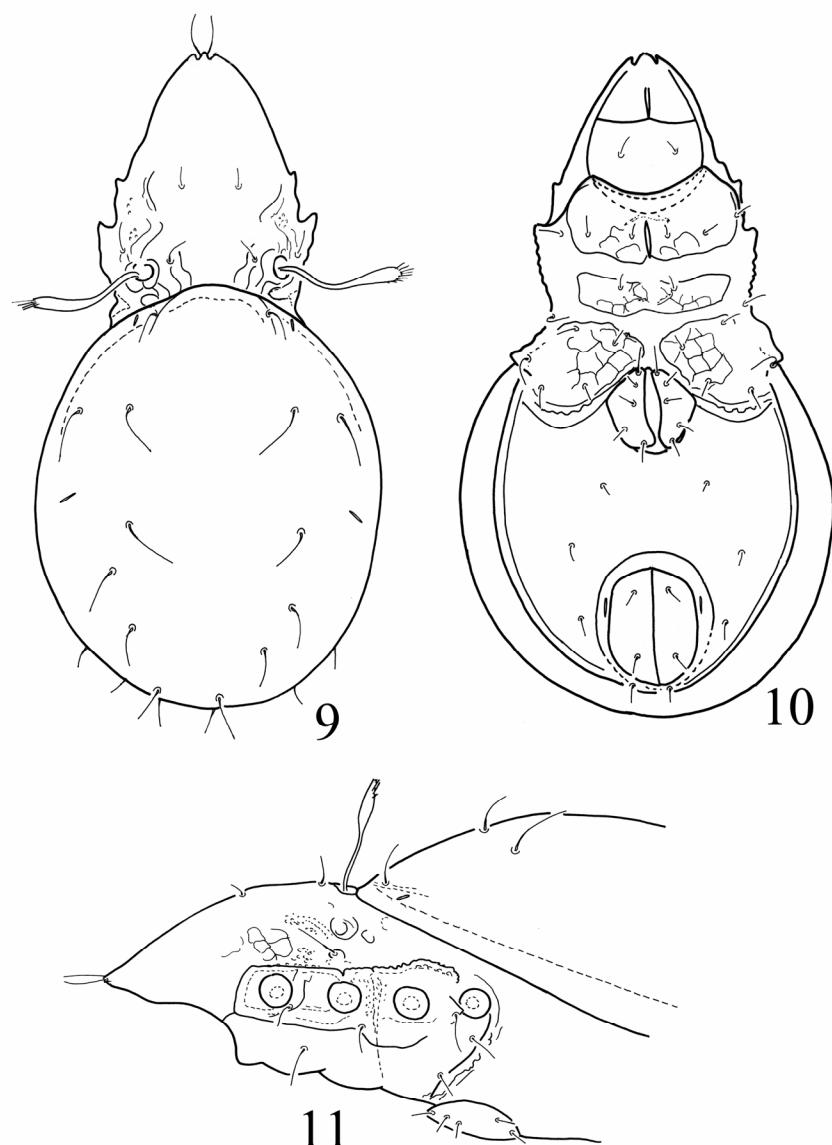
Ventral parts (Fig. 10). Apodemes and epimeral borders mostly weakly developed. $Ap\ 2$ not connected medially and only a short, anterior part of the sternal apodema observable. $Ap.\ 4$ well developed, wide, a pair of posteroepimeral furrow with some tubercles in it also observable. Epimeral surface ornamented by polygonal pattern, epimeral setae short, some of them finely ciliate. All setae in the anogenital region short and simple. Lyrifissures iad in adanal position setae ad_1 arising in posteromarginal position.



Figures 6-8. *Tectocephalus minor* Berlese, 1903. 6 = body in dorsal view, 7 = body in ventral view, 8 = rostral part in anterodorsal view

Remarks. The species of the genus *Dissorrhina* Hull, 1916 – with some exceptions – are distributed in the East-Mediterranean region spreading there from Central-European territories. Only 1–2 species live in West Europe.

The new species can clearly be characterised by the completely reduced median costula and the bristled distal end of the sensillus. However, the bristles of the new species are much shorter than the known species of the *tricarinatoides* (Dubini-



Figures 9–11. *Dissorhina shqipetarica* sp. n. 9 = body in dorsal view, 10 = body in ventral view, 11 = podosoma in lateral view

na, 1966) species group. (See the key of Mahunka, 2007).

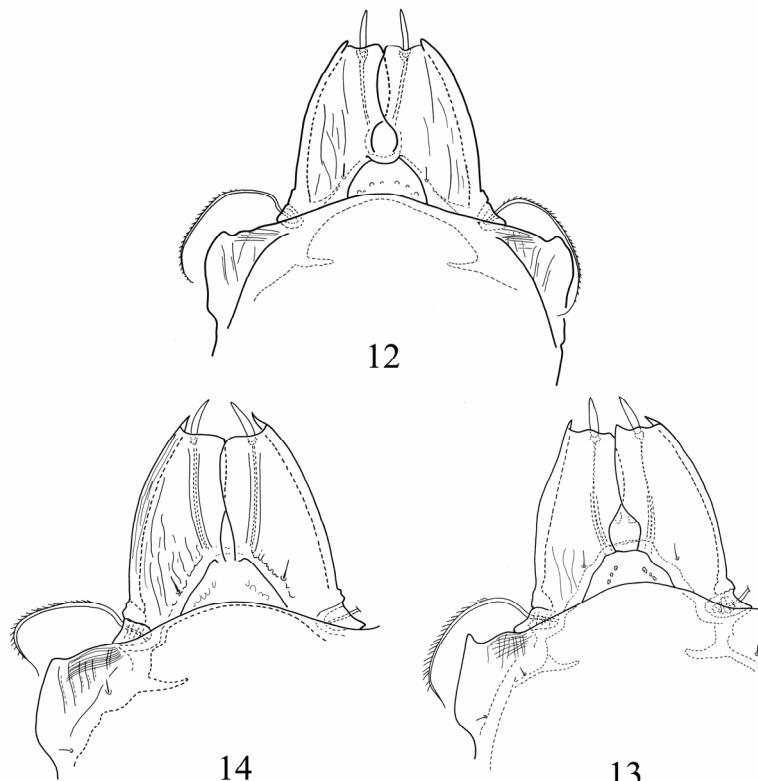
Etymology. The new species is named on the basis of the historical name of the nation which leaves in this territory, in which the Hungarian zoologists carried on zoological studies nearly hundred years ago.

***Microzetes hellenicus* (Mahunka, 1977)**
(Figs. 12–14)

Remarks. When describing the species Mahunka (1977) placed the species in the alliance of the genus *Nellacarus* Grandjean, 1936 (= *Microzetes* Berlese, 1913), but he did not deal either with the type species or the other relating

species. When studying the fauna of the Bátorliget mire a new closely allied species (*M. raczi* Mahunka, 1991) was discovered (Fig. 14). This time he examined several species known from Greece and the type of *M. baloghi* Jeleva, 1962 described from Bulgaria. These investigations proved that on the basis of the position of lamellar setae and on the ratio of the outer lamellar cusps

and the lamellar setae allt these species belong to the *hellenicus* species-group, and that they may easily be separated from the other species group of this genus; *petrocorsiensis*-group. The newly discovered specimens (Fig. 12) found in Albania are without doubt identical with *M. hellenicus* (Fig. 13), and this is made probable also by the geographical situation of the country.



Figures 12–13. *Microzetes hellenicus* Mahunka, 1977. 12 = prodorsum of a paratype, 13 = prodorsum of an exemplar from Albania. **Figure 14.** Prodorsum of *Microzetes raczi* Mahunka, 1991

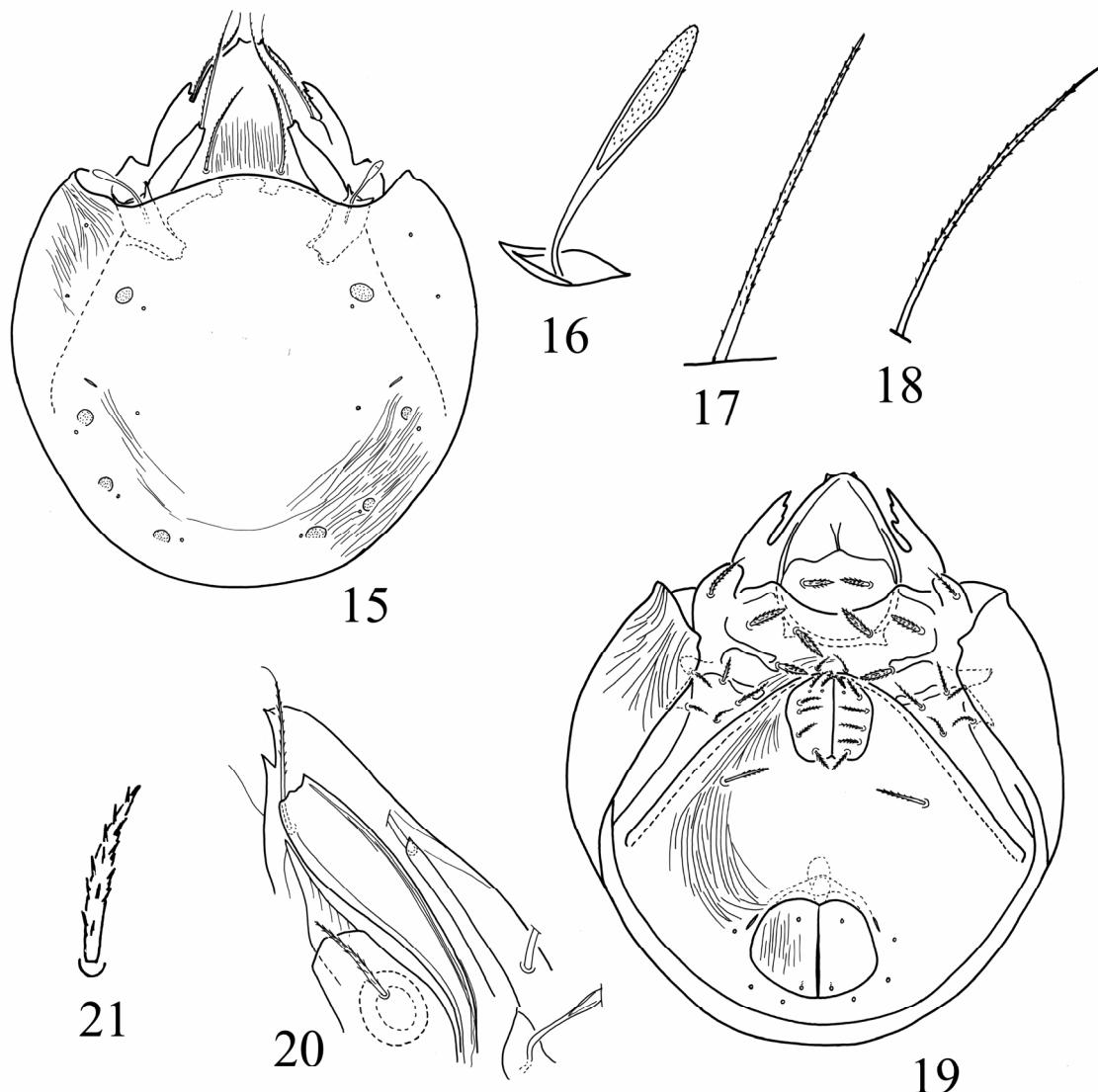
***Chamobates (Xiphobates) latissimus* sp. n.**
(Figs. 15–21)

Material examined. Holotype: Albania, Skrapar County, Tomor Mts, Ujanik, gorge of the Ujanik Stream, 23.08.2006. Leg.: Z. Fehér, A. Hunyadi, T. Huszár and D. Murányi (E-2070). 2 paratypes from the same sample. Holotype (1756-HO-2008) and 1 paratype (1756-PO-2008) HNHM, 1 paratype MHNG.

Diagnosis. Rostral apex convex with two lateral apices. Lamellae short, their apex sharply

poined laterally. Tutorium with 1–2 teeth distally. Sensillus narrow, its head slightly dilated, fusiform. Basal part of interlamellar region, surface of pteromorphae and some other fields of the body finely lineate. Pteromorphae with anterolateral excision. Ten pairs alveoli and four pairs of porose areas present. All setae in epimeral and genital region well bristly, some of them dilated. Setae in anal region minute. All legs tridactylous.

Measurements. Length of body: 488–522 µm, width of body: 433–462 µm.



Figures 15–21. *Chamobates (X.) latissimus* sp. n. 15 = body in dorsal view, 16 = sensillus, 17 = seta *in*, 18 = seta *ro*, 19 = body in ventral view, 20 = podosoma in lateral view, 21 = hypostomal setae

Prodorsum. Rostrum conical, rostral apex rounded medially, with a pair of teeth laterally. Lamellae well developed, with short, but sharply pointed lateral apex. Rostral setae (Fig. 18) setiform, shorter than lamellar ones, both pairs with fine distal end. Interlamellar setae (Fig. 17) much shorter, their distal end blunt. Sensillus (Fig. 16) long, narrow, proclinate, its head longer than

peduncle, slightly fusiform, with some minute barbs. Interlamellar region finely lineat (Fig. 15).

Notogaster. Pteromorphae and a part of the notogastral surface ornamented by weak, very characteristic sculpture, consisting of inward bending, mostly parallel lines (Fig. 15). Anterolateral corner of pteromorphae deeply incised. Ten pairs of minute alveoli and four pairs of different areae

porosae present, Aa largest of all, all others nearly equal in size and form.

Lateral part of podosoma. Tutorium gradually widened anteriorly, with sharply pointed dorsal apex and mostly 1–2 smaller teeth medially. Rostral setae arising far from apex. Dorsal margin well striate, with parallel lines. Pedotectum long and large, angular distally.

Ventral parts (Fig. 19). Hypostoma with thick, barbed setae h (Fig. 21). Epimeral setal formula: 3 – 1 – 3 – 3. All setae well barbed, setae $1a$, $1b$, and $3a$ dilated fusiform, only setae $2a$ much thinner, setiform. All others also strong, well barbed. Circumpedal carina weak, a pair of well sclerotised lath running along the genital aperture posteriorly. Genito-anal setal formula: 6 – 1 – 2 – 3. Setae in genital region strong, spiniform, well barbed, setae in the anal region minute or represented only by their alveoli. Surface of ventral plate also characteristically lineate. Similar sculpture observable also in the anal plates.

Legs. All legs tri-heterodactylous.

Remarks. The new species belongs to the species-group *Ch. (X.) rastratus* (Hull, 1914). However, the new species is well distinguished from the other species by the very thick hypostomal, epimeral and genital setae, the well sclerotised longitudinal lath and the lineate sculpture on notogaster and ventral regions.

Etymology. Named after the conspicuously broad body.

***Scheloribates salebrosus* sp. n.**

(Figs. 22–25)

Material examined. Holotype: Albania, Periferi County, Mat, 4 km to Fushë-Lurë from the

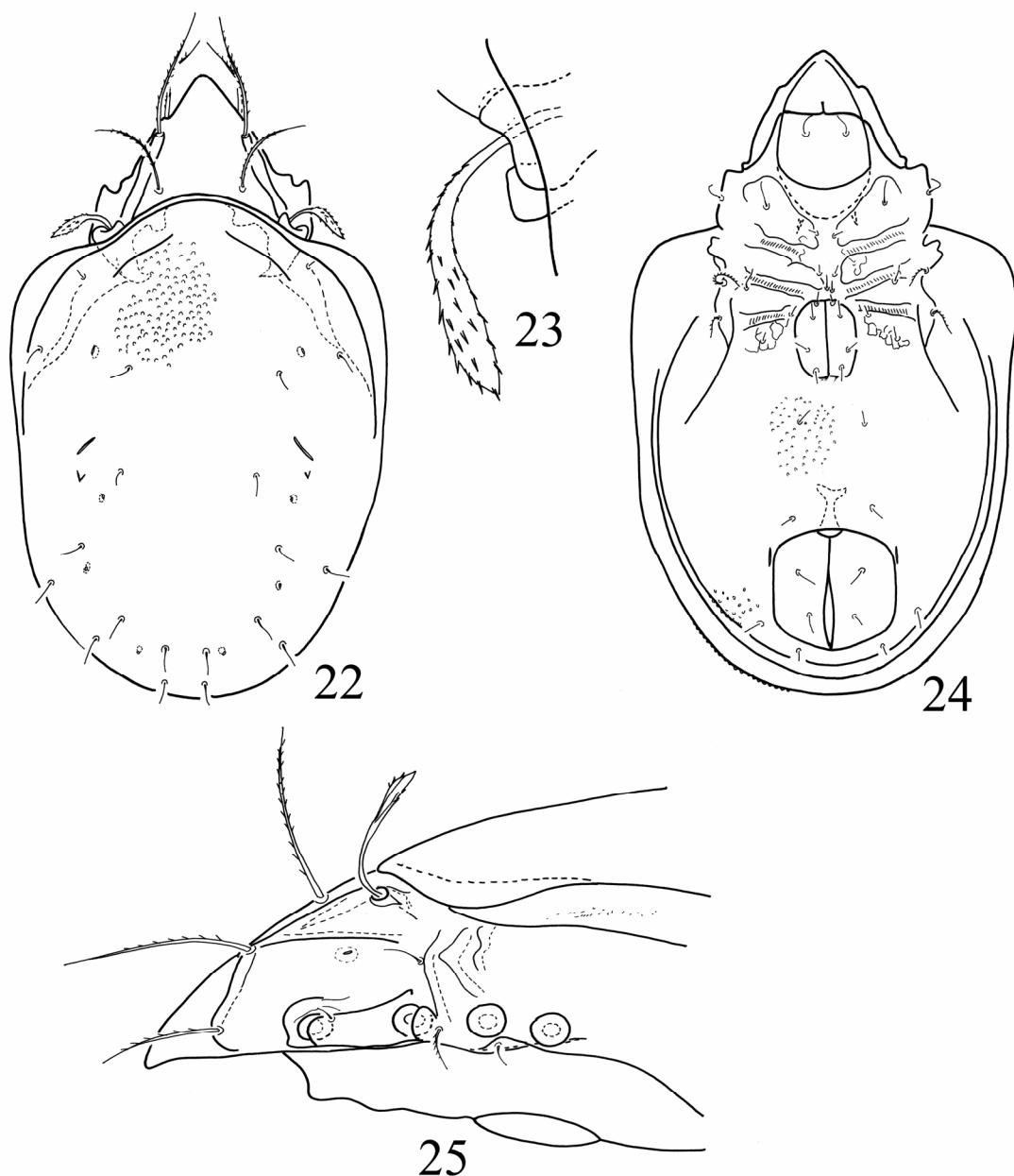
Peshkopi – Burrel road (1210 m), [stream, degraded forest], 13.04.2006. Leg.: Z. Erőss, Z. Fehér, A. Hunyadi and D. Murányi. (E-1928). 1 paratype from the same sample. Holotype (1757-HO-2008) and 1 paratype (1757-PO-2008): HNHM.

Diagnosis. Rostrum narrowed, conical. All prodorsal setae setiform, ciliate, long. Sensillus lanceolate, rarely ciliate. Surface of the notogaster covered by granules, notogaster with 10 pairs of short and fine setae and 4 pairs of small sacculi. Epimeral borders compose a closed network. Ventral plate finely granulate, surface of genital and anal plates smooth. All legs tridactylous.

Measurements. Length of body: 433–471 µm, width of body: 282–308 µm.

Prodorsum. Surface smooth. Rostral part narrowing anteriorly, conical, without sharply pointed apex. Lamellae well developed prelamellae also strong. Ratio of lamellar setae: $ex < ro < le < in$, exobothridial much thinner than the others and smooth. The remaining notogastral setae well ciliate. Sensillus (Fig. 23) lanceolate, directed laterally, its head not longer than peduncle and rarely ciliate.

Notogaster. Dorsosejugal suture convex medially, no depression behind the bothridium, pteromorphae small not protruding anteriorly. Whole surface – excepting an anteromedian band – covered by smaller or bigger granules (cloddy) (Fig. 22) Ten pairs of very thin and short notogastral setae present, setae c_2 much shorter than the others. Four pairs of small sacculi and a pair of conspicuously long lyrifissures (im) also observable.



Figures 22–25. *Scheloribates salebrosus* sp. n. 22 = body in dorsal view, 23 = sensillus, 24 = body in ventral view, 25 = podosoma in lateral view

Lateral part of podosoma. Lamella, prelamella and sublamella well developed, prelamella reaching over the insertion of rostral seta (Fig. 25). Sublamella not directed to the bothridium. Exobothridial seta simple, thin. Some well sclerotised ribs observable in the sejugal region. Pedotecta I

long and narrow, seta *Ic* arising on its dorsal margin. Circumpedal carina short, ending far from the lateral margin of ventral plate.

Ventral parts (Fig. 24). Epimeral borders – excepting *bo.4* – well developed, *bo.2* and *bo.3* long, *bo.3* not reaching the genital aperture, *bo.4*

reduced. Sternal border also present. Discidium small, slightly arched, circumpedal carina fine, not reaching the lateral margin of ventral plate. Epimeral setal formula: 3 – 1 – 3 – 3, setae $1c$ arising laterally, setae $3c$ slightly pilose, setae $4c$ located on the lateral margin of the discidium. Most of them short. Surface the ventral plate granulate, granules smaller and sparser than in the notogastral surface. All setae in the genito-anal region also short, their formula: 4 – 1 – 2 – 3. Setae ad_3 arising in preanal position, comparatively far from the anal aperture.

Legs. All legs tri- and heterodactylous.

Remarks. On the basis of the form of pteromorphae and sensillus furthermore owing to the presence and number of the notogastral setae, the new species is well ranging to the nominate subgenus of genus *Scheloribates* Berlese, 1908. The species is unique among the heretofore known species; its notogastral sculpture resembles that of *Sch. (Topobates) granifer* Grandjean, 1958, although the number of the notogastral setae in the new species is 10.

Etymology. The new species is named after the notogastral sculpture.

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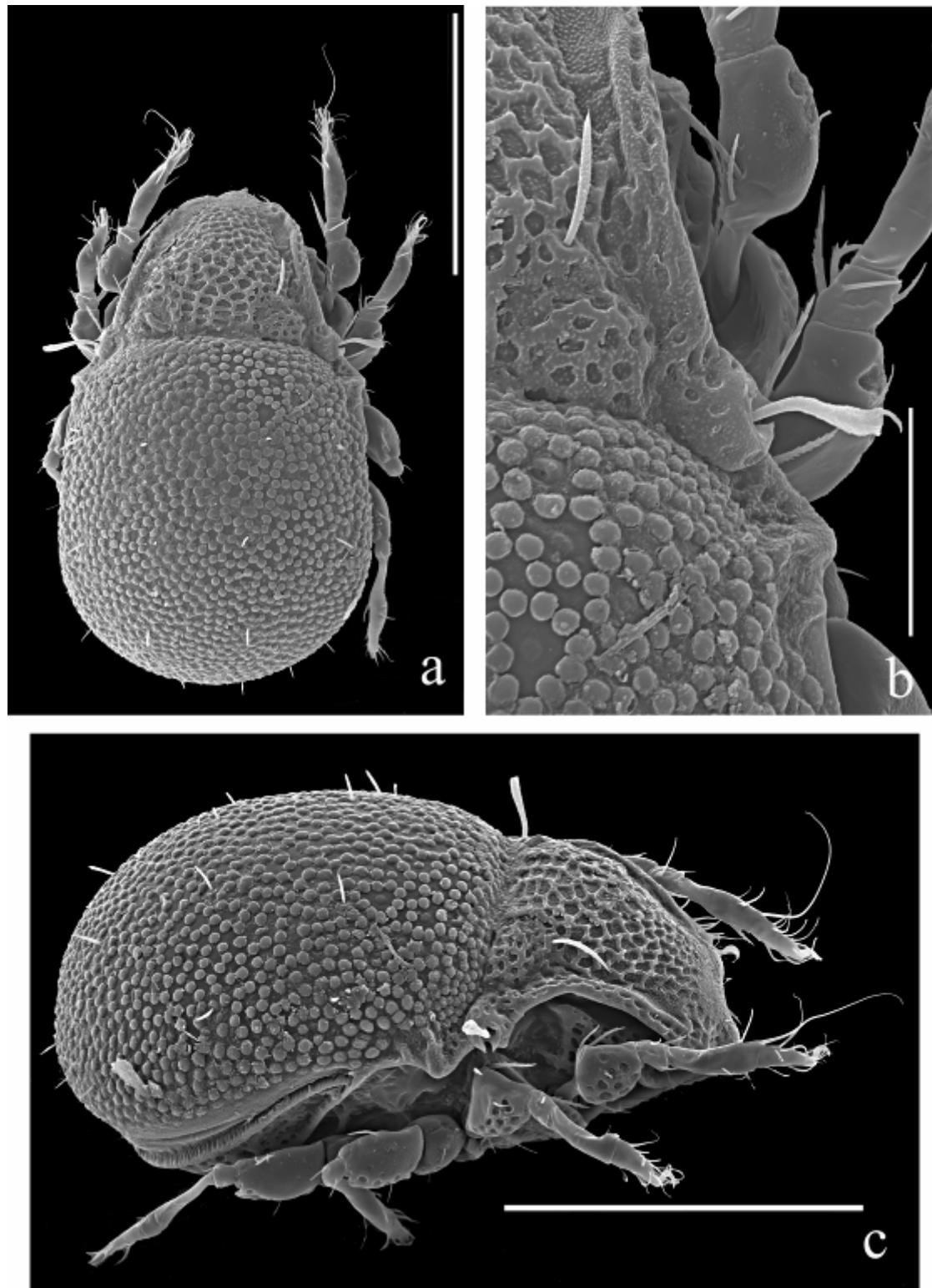


Plate I. SEM micrographs of *Carabodes csikii* sp. nov. a = dorsal view, b = humeral part with the trichobothrium, c = lateral view.